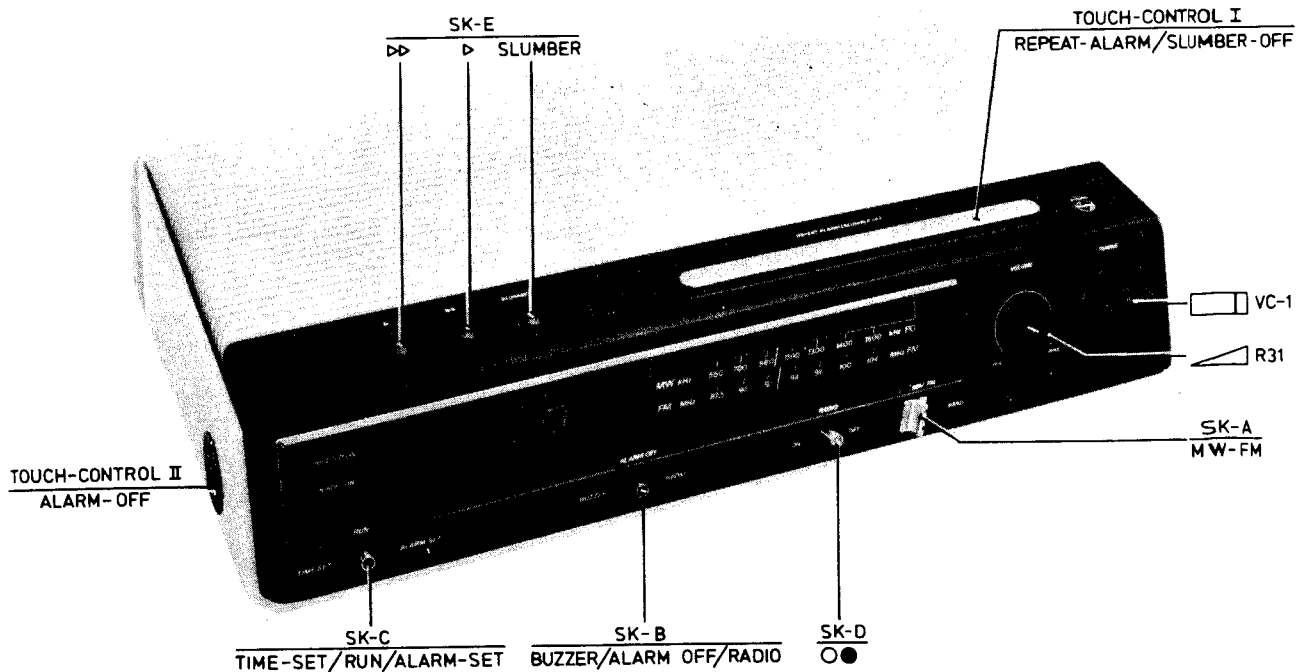


Service Service Service

- (GB) See also circuit description 90AS460
(D) Siehe auch Schaltungsbeschreibung 90AS460
(I) Vedere anche la descrizione dei circuiti 90AS460

Service Manual



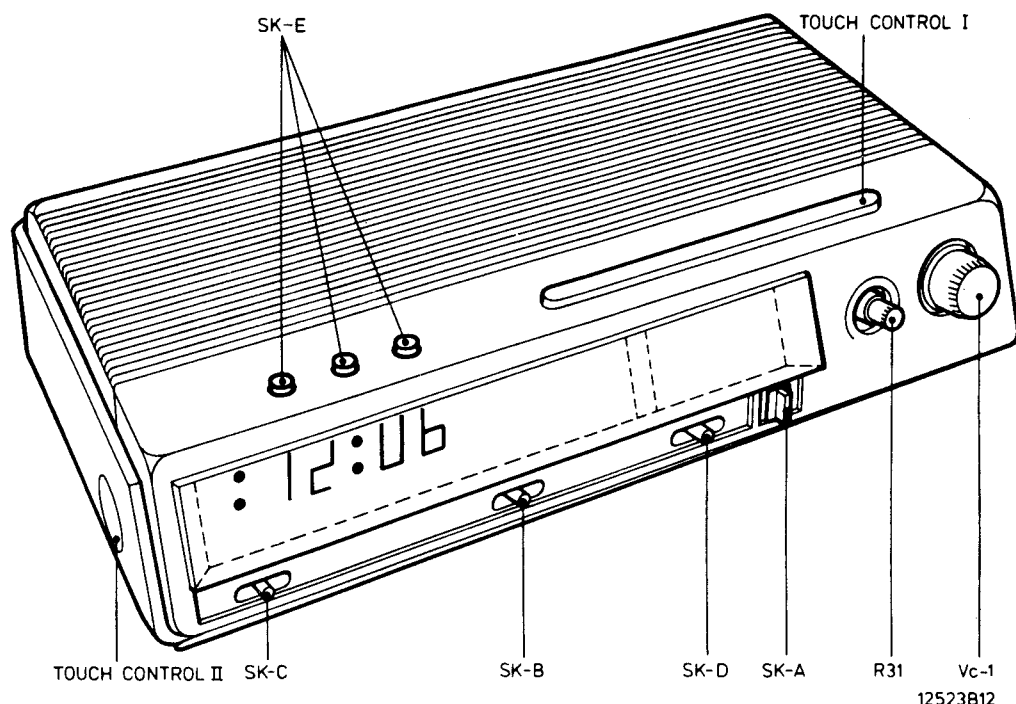
FM : 87.5 - 104 MHz
MW : 520 - 1605 kHz (577-187m)
POWER SUPPLY : 110/220V~ (50Hz)
OUTPUT : 800mW ± 1 dB (d=10%)

IF - FM : 10.7 MHz
IF - AM : 452 kHz

1156 B12



GB SETTING THE CLOCK



SK-A	: Switch for radio wave range	
SK-B	: Alarm system switch	Buzzer/Alarm-off/Radio
SK-C	: Clock time - alarm time switch	Time set/Run/Alarm set
SK-D	: On/off-switch radio section	On/off
SK-E1	: Switch for fast time setting	▷▷
SK-E2	: Switch for slow time setting	▷
SK-E3	: Slumber-switch	Slumber
Touch-I	: Temporary alarm-off slumber off touch control	Repeat-alarm/slumber-off
Touch-II	: Alarm-off touch control	Alarm-off

1. Setting the time

- Plug the line cord into the wall-socket
- Switch SK-C to time-set position.
- Switch SK-B to mid-position.

When the line cord is plugged into the wall-socket, the digits on the display start flashing. (This may also happen when the apparatus is in use.) It means that the voltage has been interrupted or cut-off.

When operating switch SK-E1 or SK-E2 the flashing stops. By means of the same switches, the clock may now be set. After this, reset switch SK-C to mid-position (run) to prevent the clock time set from being changed erroneously.

2. Setting the alarm time

- Switch SK-C to "alarm-set" position.
- SK-B remains in mid-position

After switching SK-C to "alarm", an alarm time is shown on the display. With switches SK-E1 and SK-E2 the alarm time desired can now be set.

Having done this, reset switch SK-C to mid-position (run) to prevent the alarm time set from being changed erroneously.

3. Alarms

For being awakened, proceed as follows:

- Switch SK-D to "off" position.
- Switch SK-B to position "radio" or "buzzer", so that at the predetermined alarm time either the radio or the buzzer starts working.
- Switch SK-C remains in mid-position (run).

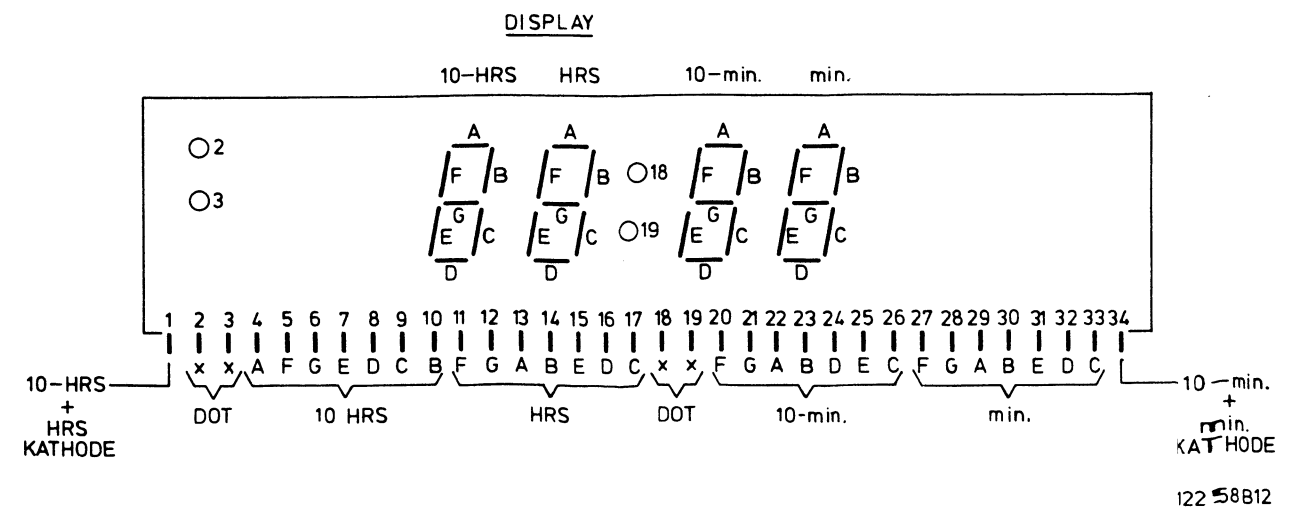
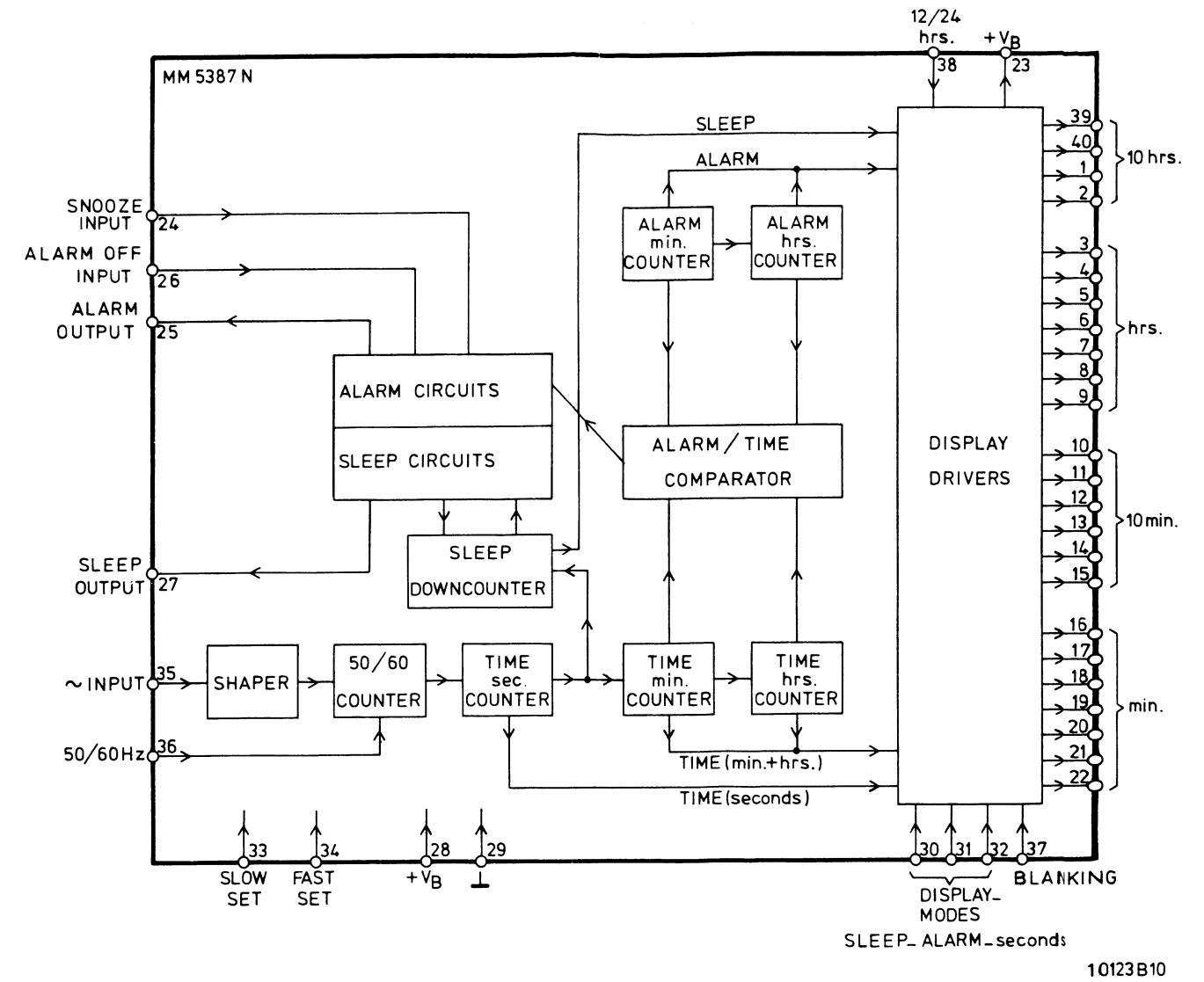
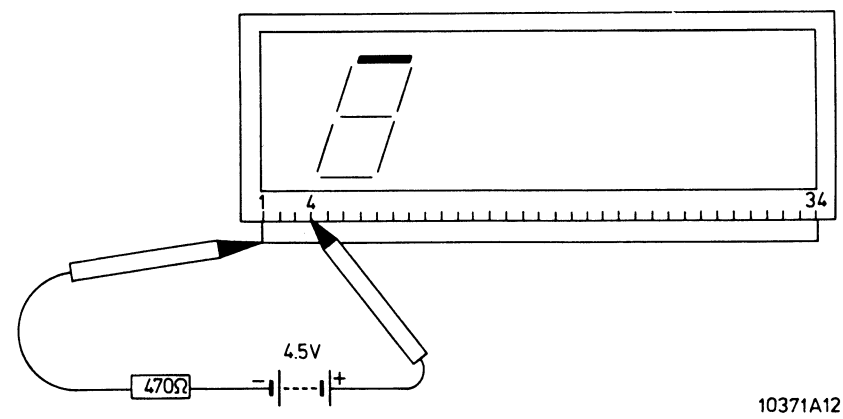
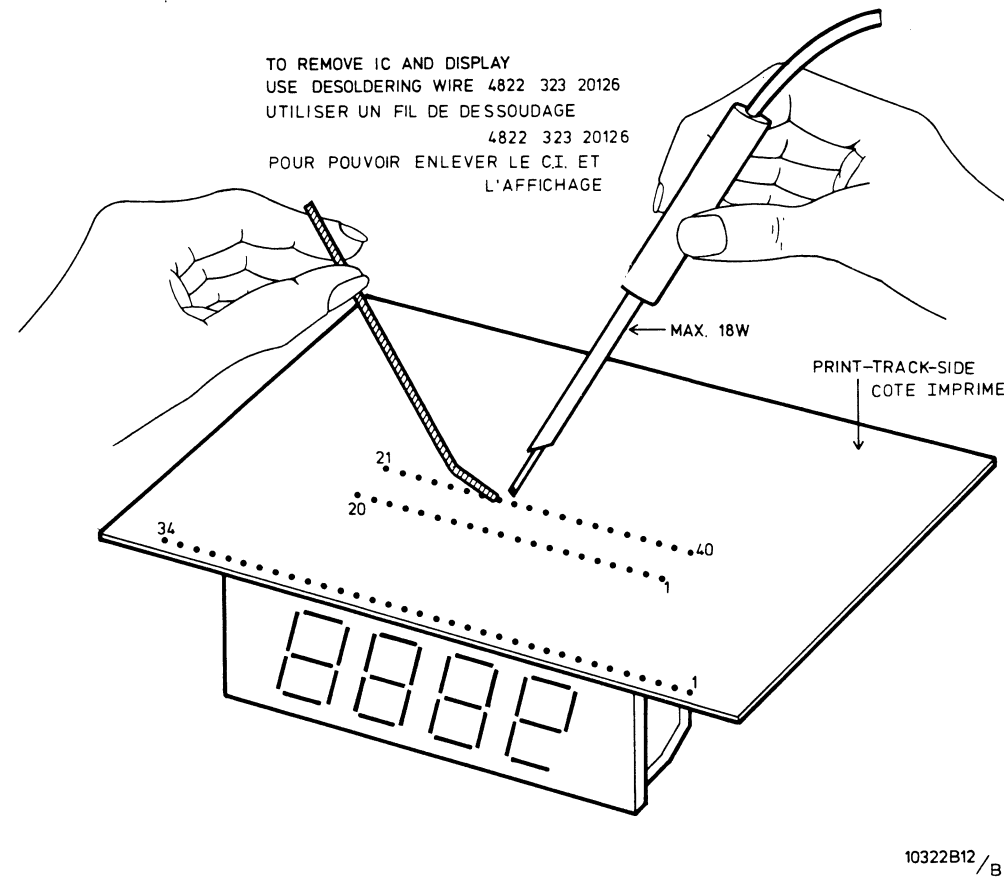
4. Turning off the alarm

This can be done in two ways:

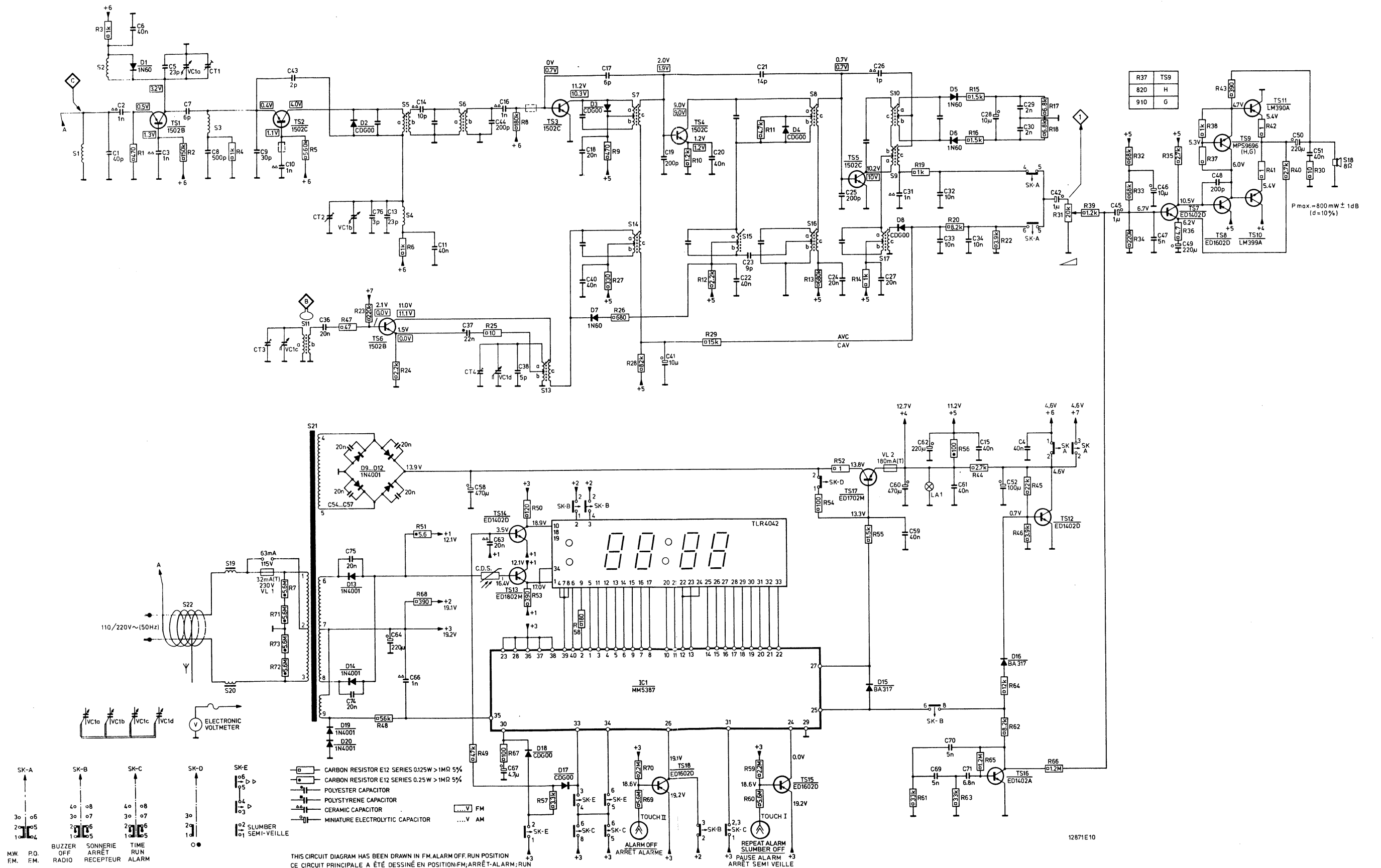
- By contacting touch control II: i.e. the alarm-off switch
 - By contacting touch control I: i.e. the repeat-alarm-switch
- The radio or buzzer is turned on again after 9 minutes (max. 5 times).

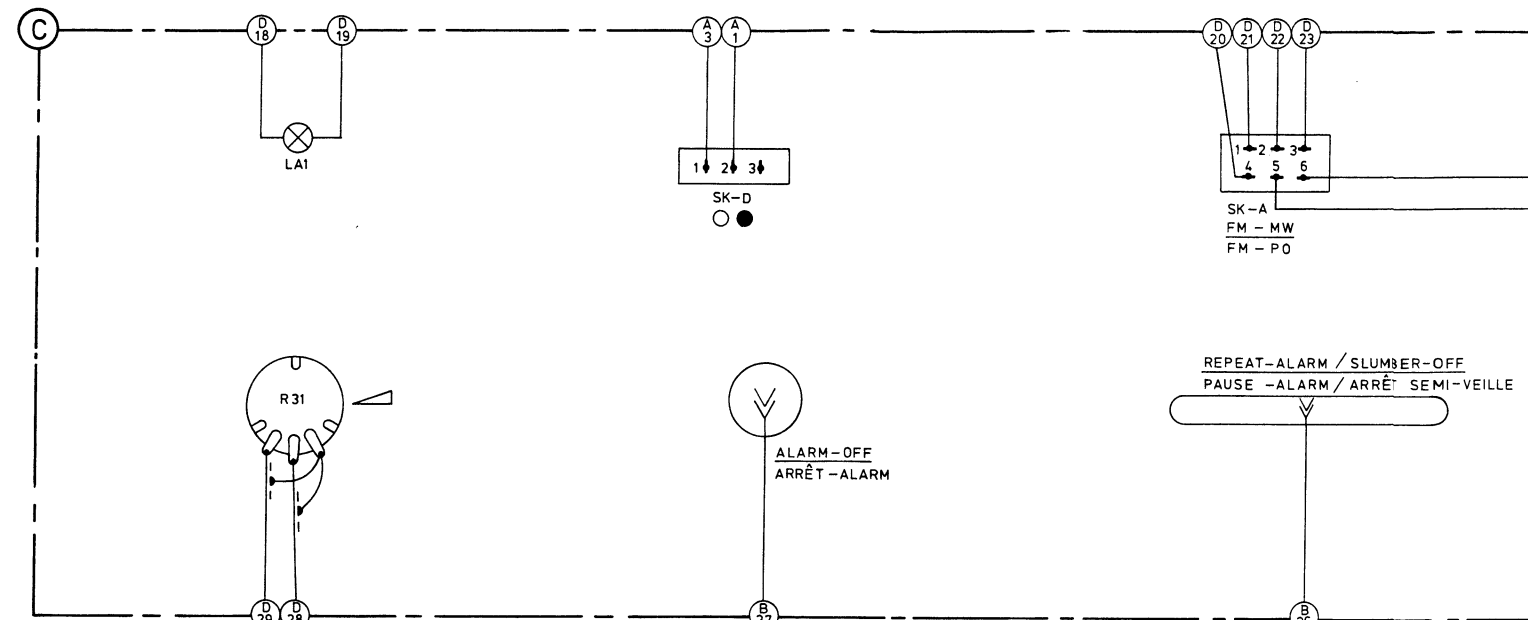
5. Slumber

- Switch SK-D to off-position.
- Push switch SK-E3. The radio turns on while the display shows a reading in minutes and, at the same time, begins counting down from 59 minutes.
- At the desired time between 59 and 00 minutes, release SK-E3. The display shows the actual time again and the radio, when reaching the time now preselected, will turn off automatically.
- If the slumber time chosen is too long, touching "Touch I" turns off the radio (slumber-off).

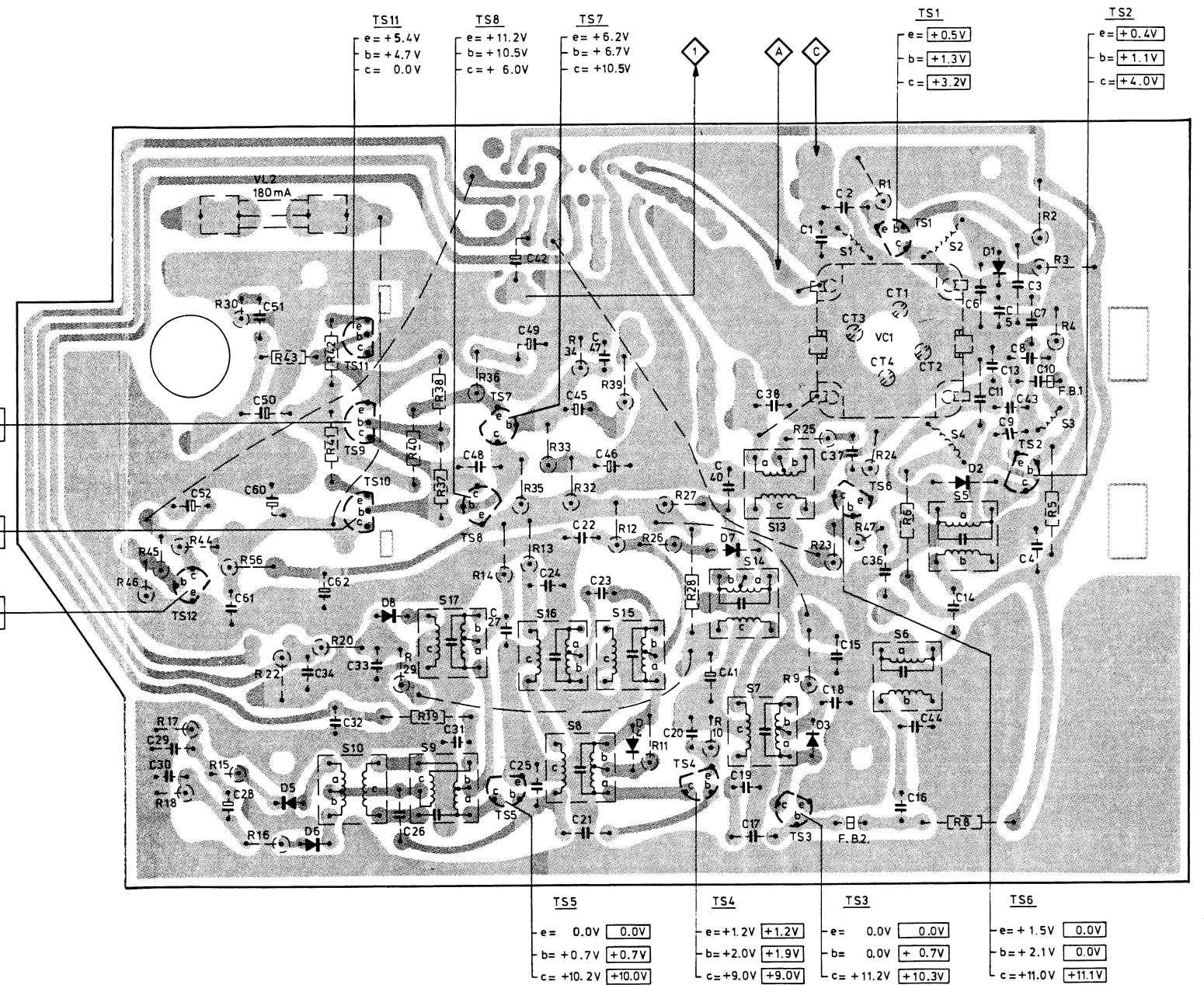
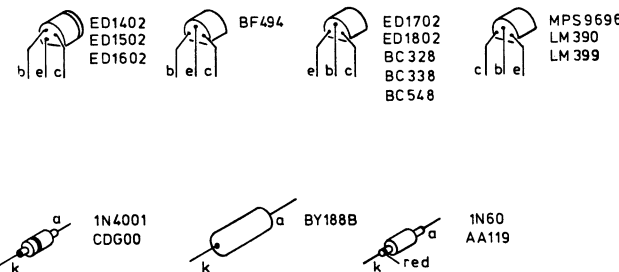
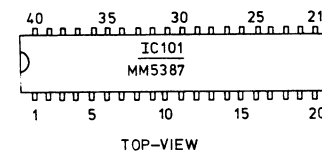
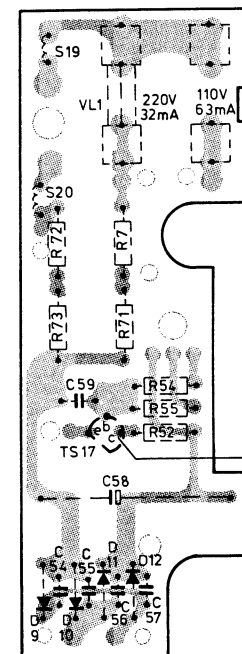
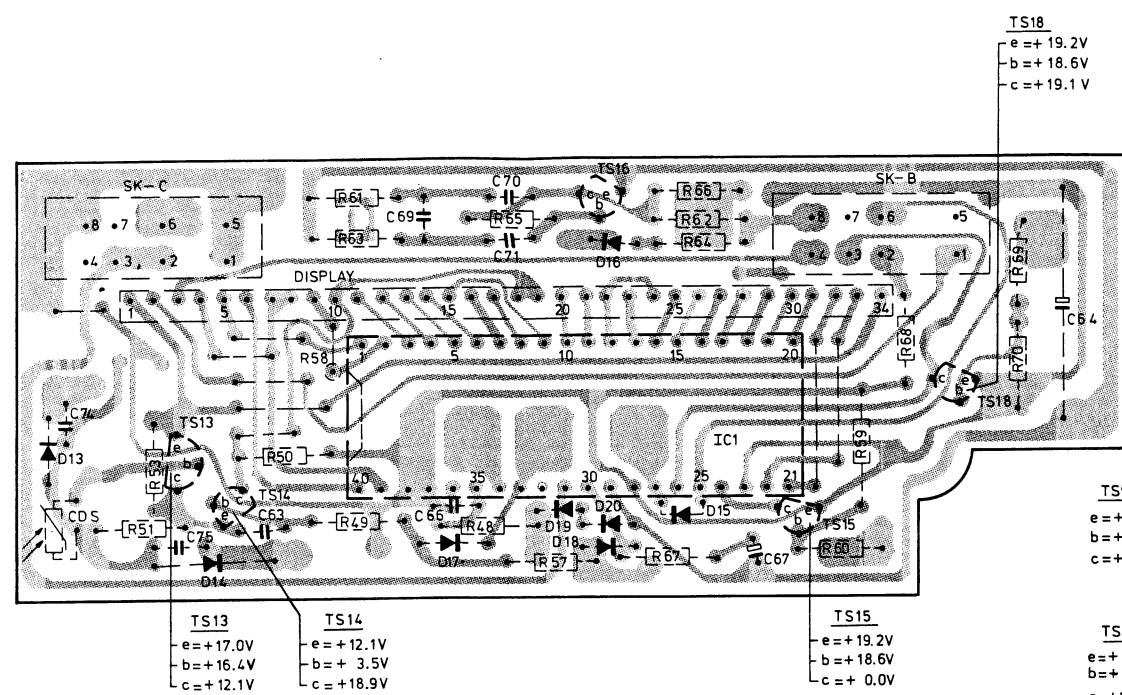


MISC.	S1 S2 D1 TS1 S3 VL1 TS2 S11 D2 TS6 S4 S5 S6 S13 TS3 D7 D3 S7 S14 TS4 S15 D4 S8 S16 TS5 S17 S9 D8 S10 D5 D6 TS16 D16 TS12 TS7...TS11 S18																																MISC.		
	S22 S19 S20 S21 D19 D20 D9...D14 C.D.S.TS14 TS13 D18 D17 IC1 TS18 TS15 TS17 D15 TS16 D16 TS12 TS7...TS11																																		
C	1	2	6	3	5	7	8	9	10	43	36	13	76	14	11	37	44	16	18	40	17	19	41	20...23	24...27	31	33	32	34	28...30	42	45...51	C		
R	3	1	2	4	5	47	23	64	66	58	63	67	25	8	26...28	9	10	12	29	59	60	54	52	55	63	56	61	44	65	64	62	45	46	66	R



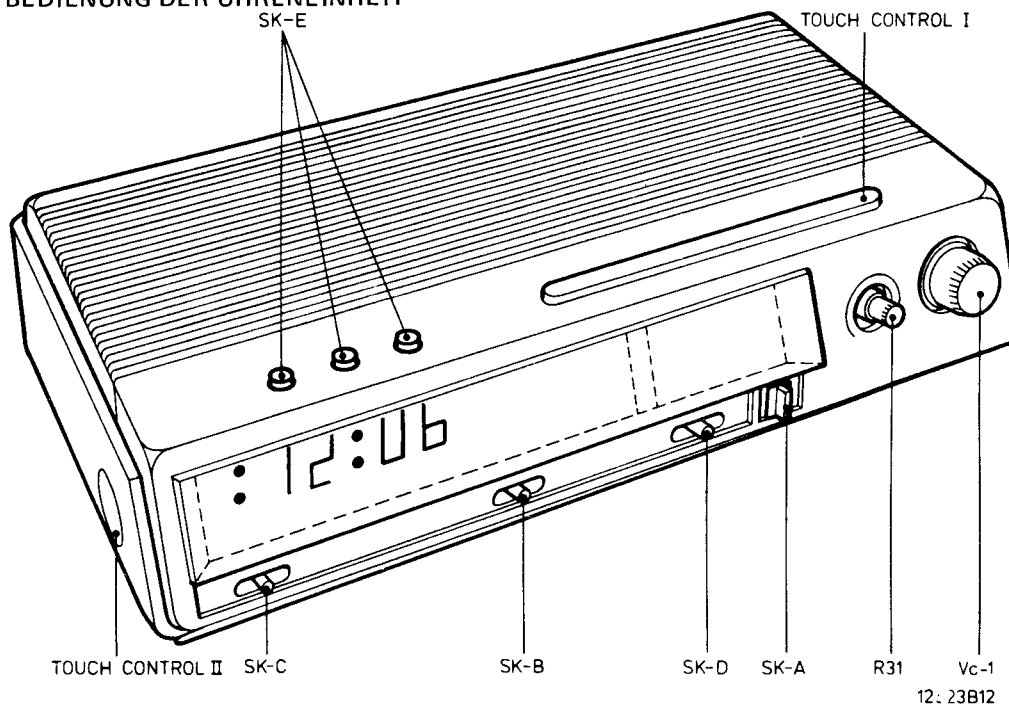


MISC	D13	SK-C	TS13	TS14	D17	D18...D20	TS16	D15	IC1	TS15	SK-B	TS18	VL 2	TS11	TS7	S1	CT1...CT4	VC1	TS1	S2	D1	MISC															
MISC	S19,20	VL1	D14							TS12				TS9,10	D8	S17	TS8		D7	S14	S13	TS6	S4,5	D2	TS2	S3	MISC										
MISC	D9,10	TS17	D11	D12										D5	D6	S10	S9	TS5	S16	S8	S15	D4	TS4	S7	TS3	D3	S6						MISC				
C	74	75	63		69	66	70	71		67		64		51					49	42	47				1	2		6	13	5	6	3	7	10	C		
C													52	61	60	50	62		48		24	45	22	23	46		40	38	37	36		14	11	9	43	4	C
C	54	55	59	58	56	57							29	30	28		34	32	33	26	31	27	25	21		20	41	19	17	18	15	16	44		C		
R		51	53		50	58	61	63	49	48	65	57		30	43	42		38	36		34	39						1					2	3	4	R	
R	72	7											46	45		56	41	40	37	14	35	13	33	32	12	26	27	28		25	23	47	24	6	5	R	
R	73	71	54	55	52								18	17	15	16	22	20	29	19					11	10		9			8				R		



D

DIE BEDIENUNG DER UHRENEINHEIT



SK-A	: Wellenbereichumschalter	
SK-B	: Weckwahlschalter	Buzzer/Alarm-off/Radio
SK-C	: Uhrzeit/Weckzeit-Schalter	Time-set/Run/Alarm set
SK-D	: Ein-/Aus-Schalter (Radioteil)	On/off
SK-E1	: Schalter für schnellen Uhrvorlauf	▷▷
SK-E2	: Schalter für langsamen Uhrvorlauf	▷
SK-E3	: Schlummerschalter	Slumber
Sensortaste I (Touch I)	: Für Weck/Schlummer-Unterbrechung	Repeat-alarm/Slumber-off
Sensortaste II (Touch II)	: Für Weckschaltung	Alarm-off

1. Einstellen der Uhrzeit

Das Einstellen der Uhrzeit geschieht wie folgt:

- Gerät an das Lichtnetz anschliessen
- SK-C-Schalter in Stellung "Time-set".
- SK-B-Schalter in Mittelstellung.

Sobald das Gerät an das Lichtnetz angeschlossen ist, beginnen die Anzeigeziffern zu flackern. (Die Ziffern können auch flackern, wenn das Gerät spielt. Es bedeutet, dass die Spannung unterbrochen oder abgeschaltet war.) Wird Schalter SK-E1 oder SK-E2 betätigt, so hört das Flackern auf. Mit diesen Schaltern kann die Uhr wieder neu gestellt werden. Darauf muss man Schalter SK-C wieder in Mittelstellung ("Run") bringen, um zu vermeiden dass die Uhrzeit versehentlich verstellt wird.

2. Einstellen des Weckzeitpunktes

- Schalter SK-C in Stellung "Alarm-set".
- Schalter SK-B bleibt in Mittelstellung.

Nachdem man SK-C auf "Alarm" umgeschaltet hat, zeigt das Display eine willkürliche Weckzeit an. Mit SK-E1 und SK-E2 kann dann die gewünschte Weckzeit eingestellt werden.

Danach wieder SK-C in Mittelstellung ("Run") schalten, damit man vermeidet, dass die eingestellte Weckzeit versehentlich verstellt wird.

3. Wecken

Erforderliche Einstellungen:

- Schalter SK-D in Stellung "Off".
- Schalter SK-B in Stellung "Radio" oder "Buzzer".
Zum eingestellten Zeitpunkt wird entweder das Radio oder der Summer wecken.
- Schalter SK-C bleibt in Mittelstellung ("Run").

4. Wecken aus

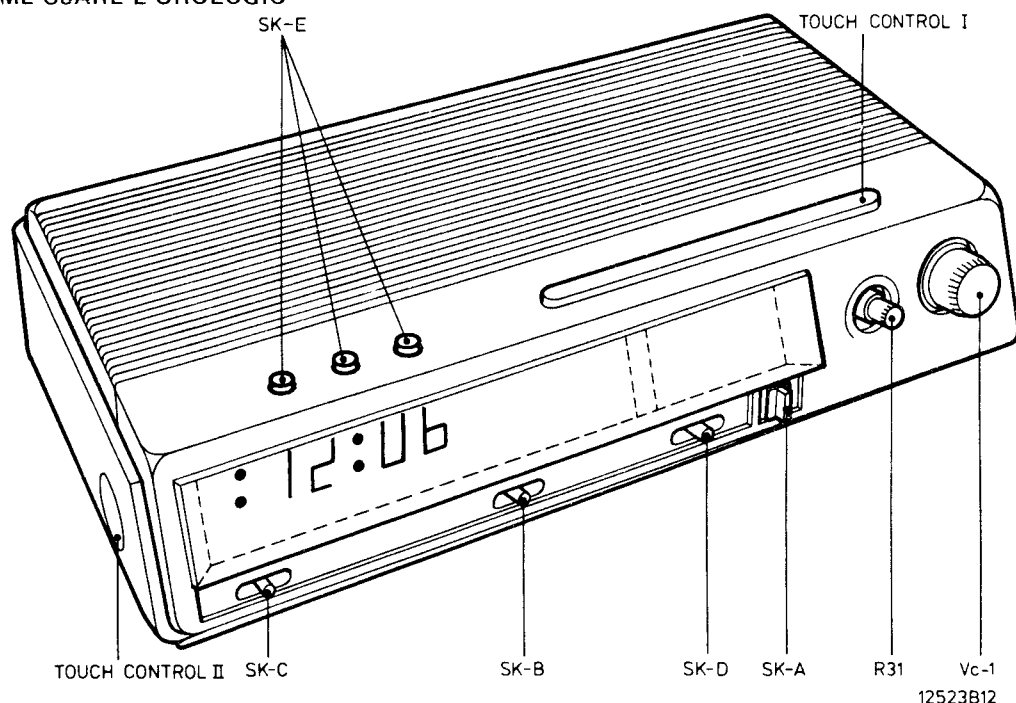
Die Weckautomatik kann auf zwei Weisen abgeschaltet werden. Dazu muss man eine der folgenden Sensortasten berühren:

- Sensortaste II (zum Abstellen der Weckelektronik).
- Sensortaste I (repeat-alarm).

Radio oder Summer wird nach 9 Minuten wieder eingeschaltet (maximal: 5 mal).

5. Schlummern (slumber)

- Schalter SK-D in Stellung ("Off").
- Schalter SK-E3 drücken. Das Radio wird eingeschaltet; das Display gibt eine Minutenanzeige und zählt ab 59 Minuten rückwärts.
- Zum gewünschten Zeitpunkt zwischen 59 und 10 Minuten SK-E3 loslassen. (Das Display zeigt nun wieder die Uhrzeit an das Radio wird zum soeben eingestellten Zeitpunkt automatisch abschalten).
- Hat man eine zu lange Schlummerzeit gewählt, dann wird eine leichte Berührung der Sensortaste I (slumber-off) das Radio abschalten.



SK-A	: Commutatore di gamma d'onda della radio	
SK-B	: Selettore di sveglia	Buzzer/Alarm-off/Radio
SK-C	: Commutatore dell'ora della suoneria	Time set/Run/Alarm set
SK-D	: Interruttore di inserimento/arresto della parte radio	On/off
SK-E1	: Commutatore per il posizionamento "rapido" dell'orario	▷▷
SK-E2	: Commutatore per il posizionamento "lento" dell'orario	▷
SK-E3	: Commutatore di semisveglia	Slumber
Tasto-I	: Contatto sensitivo per la pausa allarme/arresto	Repeat-alarm/Slumber-off
Tasto-II	: Contatto sensitivo per l'arresto della suoneria	Alarm-off

1. Messa in orario

- Collegare l'apparecchio alla rete.
- Porre il commutatore SK-C nella posizione "Time-set".
- Porre il commutatore SK-B nella posizione intermedia.

Introducendo la spina nella presa di corrente, le cifre sullo schermo indicatore si mettono a lampeggiare (ciò può verificarsi anche durante l'impiego). Questo significa che la tensione è stata interrotta o tolta.

Inserendo il commutatore SK-E1 o SK-E2, il lampeggiamento si arresta. Gli stessi commutatori permettono la messa in orario.

Spostare successivamente il commutatore SK-C nella posizione intermedia (Run) in modo da evitare di sregolare la sveglia.

2. Regolazione del tempo di allarme

- Porre il commutatore SK-C nella posizione "Alarm-set".
- SK-B nella posizione intermedia.

Ponendo SK-C in posizione "Alarm", il quadrante indicatore mostra un tempo di sveglia qualsiasi. La regolazione del tempo di sveglia scelto viene effettuata con i commutatori SK-E1 ed SK-E2.

Rimettere poi il commutatore SK-C nella posizione intermedia (Run) per evitare una sregolazione.

3. Risveglio

- Come far funzionare la sveglia?
- Porre il commutatore SK-D nella posizione "Off".

- Porre il commutatore SK-B nella posizione "Radio" o "Buzzer" in modo che la radio o la suoneria si mettono a funzionare al tempo stabilito e regolato precedentemente.
- Il commutatore SK-C rimane nella posizione intermedia (Run).

4. Interruttore della suoneria

L'interruzione della suoneria può venir effettuata in due modi:

- Sfiando "Touch-II": pulsante di arresto della suoneria
 - Sfiando "Touch-I": pulsante "repeat-alarm".
- Con un intervallo di 9 minuti la radio o la suoneria possono rimettersi a funzionare (5 volte al massimo).

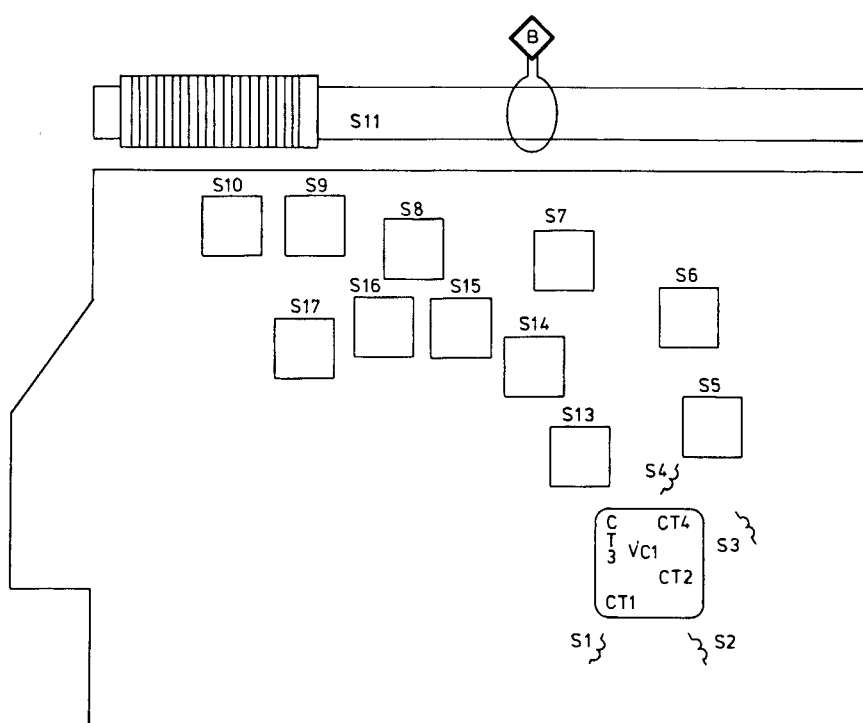
5. Semisveglia (slumber)

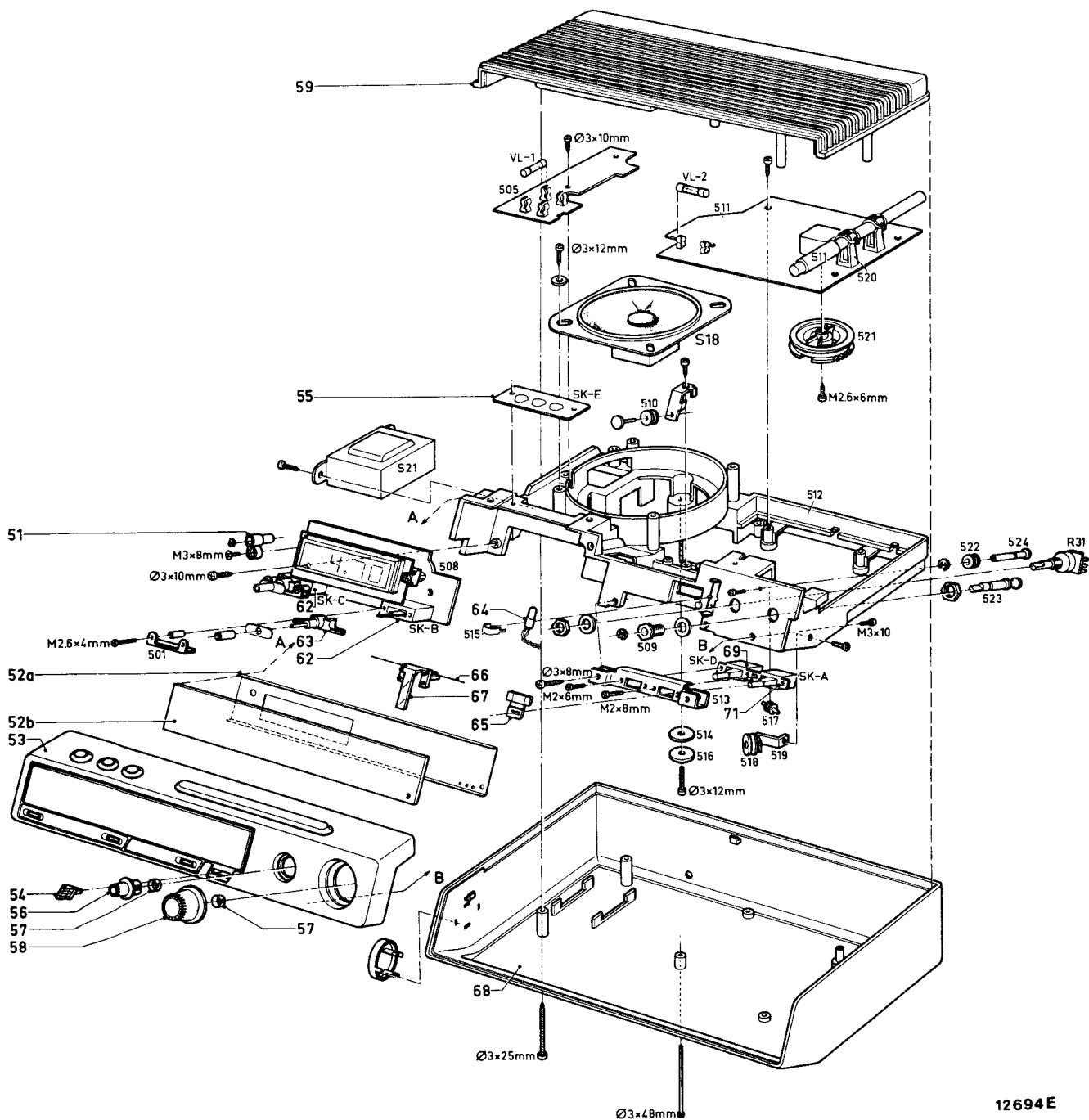
- Porre il commutatore SK-D in posizione "Off".
 - Inserire il commutatore SK-E3. La radio funziona, il quadrante indicatore fa vedere le cifre dei minuti e, nello stesso tempo, conta a rovescio partendo da 59 minuti.
 - Rilasciare il commutatore SK-E3 al tempo che viene scelto tra 59 e 00 minuti.
- Lo schermo indicatore mostra l'ora attuale e la radio si arresta automaticamente non appena viene raggiunto il tempo stabilito.
- Se il tempo di semisveglia che si è scelto è troppo lungo, la radio può venir arrestata sfiorando "Touch-I" (slumber-off).

Wave range	 →							
SK...	Signal to			Var. cap.	Detune	Adjust	Indication	
MW (520-1605 kHz)	1 via 40 nF		A	Min. cap.	S14,S15,S16	S17	1 max.	
						S16		
						S15		
						S14		
	512 kHz	B	Max. cap.		S13	1 max.		
	1635 kHz		Min. cap		Ct4			
	580 kHz		Tune in		S11			
	1400 kHz				Ct3			
FM 2	10,7 MHz		C	Min. cap.	S5,S6,S7	S9	1 max.	
						S8		
						S7		
						S6		
						S5		
						S10		1 min.
	86,5 MHz	86,5 MHz	C	Max. cap.		S4	1 max.	
	105 MHz	109 MHz		Min. cap.		Ct2		
	90 MHz	92 MHz		Tune in		S2		
	103 MHz	102 MHz				Ct1		
	Repeat, Herhalen, Répéter, Wiederholen, Ricominciare, Repetera, Gentage, Gjentagelse, Toista							

1 IF-AM = 452 kHz

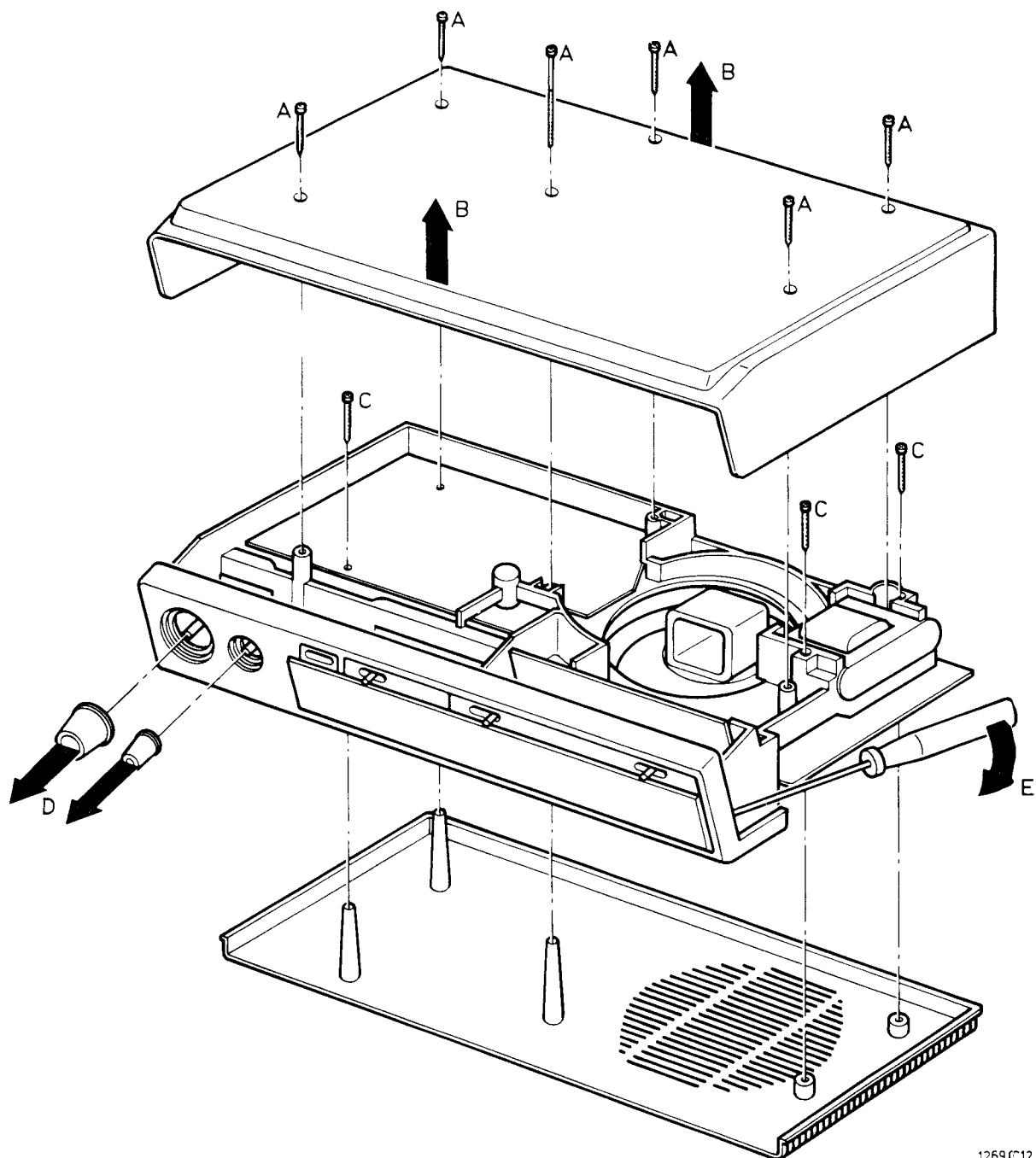
2 FM: /00/40 = 87,5 - 104 MHz
/01 = 87,5 - 108 MHz



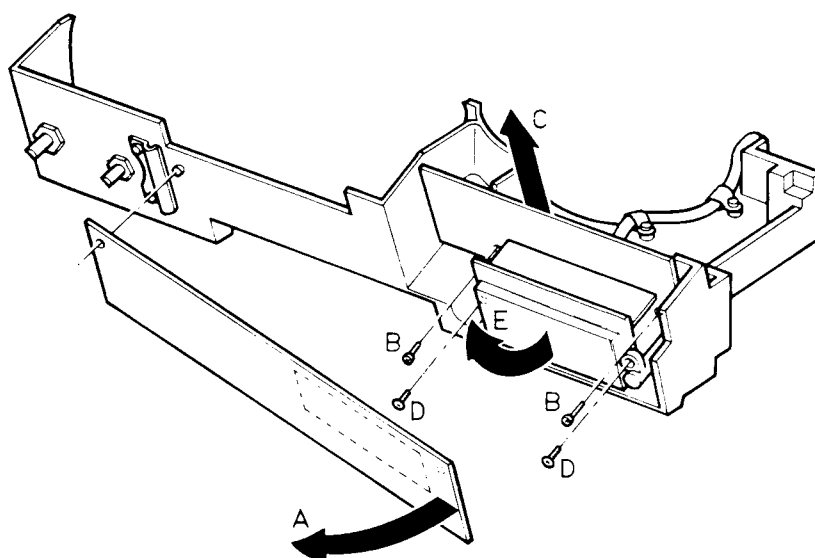


12694E

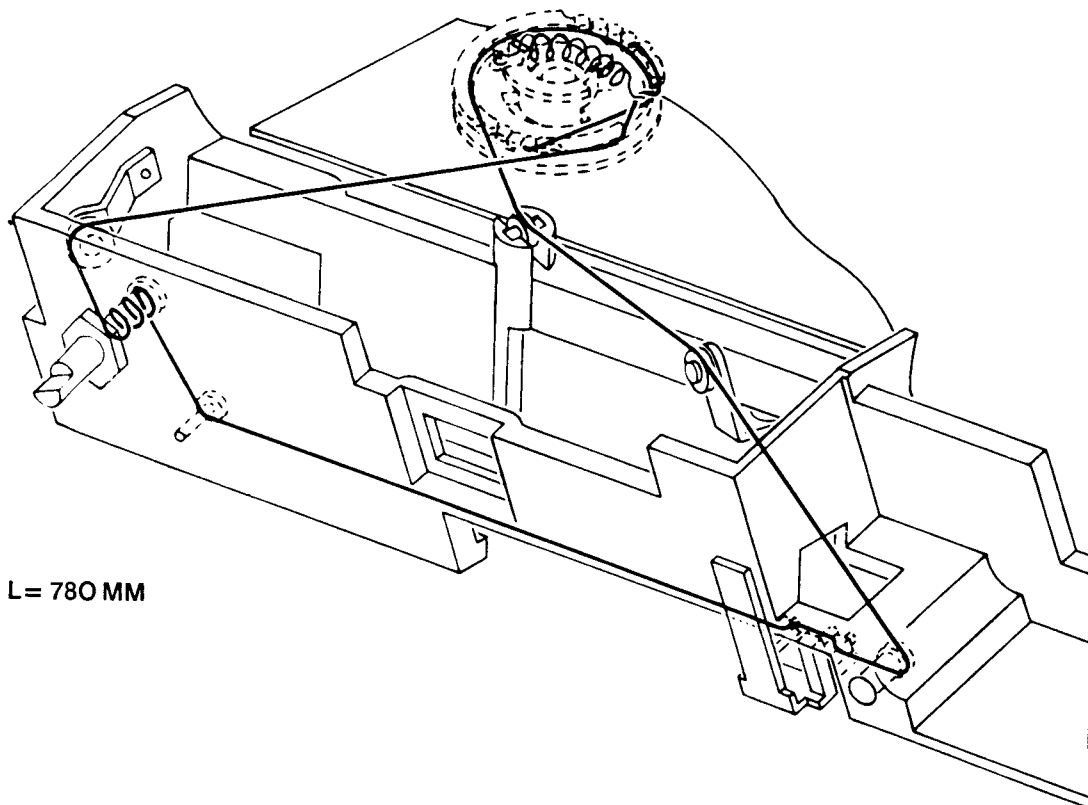
51	4822 404 10371	61	4822 454 10565
52a,b	4822 333 40223	62	4822 277 20251
53 /00/15/50	4822 426 50225	63	4822 267 30286
53 /28	4822 426 50224	64	4822 134 40348
54	4822 411 60571	66	4822 321 30214
55	4822 277 20252	67	4822 450 80571
56	4822 413 30709	68	4822 426 90048
57	4822 492 61974	69	4822 277 20156
58	4822 413 40753	70	4822 277 20196
59	4822 426 40115		



1269 C12



12691A12



L = 780 MM

12693A12

- (GB) Change over from 50 to 60 Hz is effected by opening the bridge at point 36 of IC101.
- (D) Umschaltung von 50 auf 60 Hz erfolgt durch Öffnung der Brücke an Punkt 36 von IC101.
- (I) La commutazione da 50 a 60 Hz si fa aprendo il ponticello sul punto 36 del C1101.

-TS- 			-D- 		
1,6	ED1502 (BF495)	4822 130 40947	13,14,19	TLR 4042 display	4822 130 30946
2,3,4,5	ED1502 (BF494)	5322 130 44195	15,16,17,18	IN4001 (BY188B)	4822 130 30829
7	ED1402 (BC548B)	4822 130 40937		CDG00 (BA216)	5322 130 30702
8	ED1602 (BC558A)	4822 130 40962	-C- 		
9	MPS9696 (BC548)	4822 130 40938	69,70	Mylar cap. 5 nF ± 10%	4822 121 40505
10,11	LM390/399 (BC328/338)	4822 130 40942	71	Mylar cap. 6,8 nF ± 10%	4822 121 50538
12	ED1402 (BC548B)	4822 130 40937	73,74,75	Cer. cap. 20 KpF ± 20%	4822 122 30103
17	ED1702 (BC338)	5322 130 44121	-Miscellaneous		
-D- 				Photo resistor CDS	4822 116 10018
1,7	IN60 (AA119)	5322 130 40229		DE-solder-wire	4822 323 20216
2,3,4,8	CDG00 (BA216)	5322 130 30702	-C- 		
5,6	IN60P (2-AA119)	4822 130 30312	43	Cer. cap. 3 pF ± ¼ pF	4822 122 31223
9,10,11,12	IN4001 (BY188B)	4822 130 30829	7	Cer. cap. 4 pF ± ¼ pF	4822 122 31043
-S- 			38	Cer. cap. 5 pF ± ¼ pF	4822 122 40103
3,19,20	FM-trap coil	4822 157 50791	17	Cer. cap. 6 pF ± ¼ pF	4822 122 31224
5,6	FM-IFT. coil	4822 153 50197	23	Cer. cap. 9 pF ± ¼ pF	4822 122 40098
7,8	FM-IFT. coil	4822 153 50198	21	Cer. cap. 14 pF ± ¼ pF	4822 122 31239
9	FM-DET. coil	4822 153 10237	5,13	Cer. cap. 23 pF ± 5%	4822 122 40094
10	FM-DET. coil	4822 156 30442	9	Cer. cap. 30 pF ± 5%	4822 122 40099
11	MW-ant. coil	4822 158 60409	32,33,34	Cer. cap. 10 KpF ± 20%	4822 121 40015
13	AM-osc. coil	4822 156 30525	18,24,27	Cer. cap. 20 KpF ± 20%	4822 122 30103
14	AM-IFT coil	4822 156 30407	36,54,55	Cer. cap. 20 KpF ± 20%	4822 122 30103
15,16	AM-IFT coil	4822 153 10287	56,57	Mylar cap. 22 KpF ± 10%	4822 121 40513
17	AM-DET coil	4822 153 10232	37	Cer. cap. 40 KpF ± 20%	4822 122 31152
18	Loudspeaker	4822 240 30099	4,6,11,15	Varco	4822 125 20189
21	Mainstransformer	4822 146 30305	20,22,40,51,59,61		
CLOCK			VC-1		
-TS-IC-  			-Miscellaneous-		
IC101	MM5387 clock-IC	4822 209 10001	VL-1	Ferrite bar 120x10 mm	4822 526 10123
13	ED1802 (BC328)	5322 130 44104	R31	Fuse 40 mA slow	4822 253 30003
14	ED1402 (BC548B)	4822 130 40937		Potm. vol. 20 kΩ	4822 101 30338
15,18	ED1602 (BC558A)	4822 130 40962			
16	ED1402 (BC548A)	4822 130 40948			

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

(D)

Die Sicherheitsvorschriften erfordern, dass das Gerät sich nach der Reparatur in seinem originalen Zustand befindet und dass die benutzten Einzelteile den aufgeführten Teilen identisch sind.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.